

MINCOM PC-500 RECORDER/REPRODUCER

SPECIFICATIONS

GENERAL

Finish: MIL finishes used throughout.

Power Requirements: 117 volts ± 10 V, or 234 volts ± 20 V single phase AC, 48 - 62 cps, or 400 cps $\pm 10\%$.

Less than 650 watts for any mode of operation for a complete 14 channel record system. Surge, less than 1 kw and not more than 10 seconds, for any mode.

Size and Weight: Complete 14 channel portable recorder self contained in a cabinet 24" high by 17 3/4" wide by 16 1/2" deep.

Maximum weight: 170 lb. including power supply.

Mounting: May be operated in its own case or adapted to RETMA rack mounting.

RFI Shielding: Completely RFI shielded to meet intent of MIL-I-26600.

Ambient Temperature Range: Operating 0° to 50° C
Non-operating -28° to +65° C

Humidity: Up to 95% without condensation.

TAPE TRANSPORT

All specifications stated using 14" precision (1/2" or 1") reels with 9,200 feet of recommended tape.

Tape Speed: Choice of three ranges, each with five adjacent electrically selectable speeds, covering a range of 1 7/8 ips to 120 ips.

Speed Accuracy: $\pm 0.20\%$ of selected record or reproduce speed.

Reel Capacity: Precision or standard 10 1/2", 12 1/2", or 14" with NAB hub.

Recording Time: 15 minutes at 120 ips
 30 minutes at 60 ips
 60 minutes at 30 ips
 120 minutes at 15 ips
 240 minutes at 7½ ips
 480 minutes at 3 3/4 ips
 960 minutes at 1 7/8 ips

Start Time: 8 seconds maximum at any speed.

Stop Time: 5 seconds from the Run mode at any speed.

Rewind Time: Less than 6 minutes.

Dynamic Skew: Over a 10 second period, will not exceed ±0.3 microsecond measured on two adjacent tracks in the same head stack, at 120 ips.

Wow and Flutter
 Maximum Cumulative:

<u>Speed (ips)</u>	<u>% Flutter Peak-to-Peak</u>	<u>Center Frequency</u>	<u>Bandwidth</u>
120	0.25	52.5 kc	0.1 cps - 10 kc
60	0.25	52.5 kc	0.1 cps - 10 kc
30	0.40	22.0 kc	0.1 cps - 5.0 kc
15	0.50	10.5 kc	0.1 cps - 2.5 kc
7½	1.00	5.4 kc	0.1 cps - 1.25 kc
3 3/4	1.50	2.3 kc	0.1 cps - 0.625 kc
1 7/8	2.50	1.3 kc	0.1 cps - 0.3125 kc

End-of-Tape Sensing: Photocell sensors for end-of-tape sensing prior to runout. Selectively initiates auto stop, auto rewind or auto transfer. Additional sensors initiate Stop for tape breakage.

Isoloop Drive: Closed loop, positive drive, 1" or ½" tape.

Tape Width: ½" or 1" standard.

Operating Modes: Backlighted pushbutton controls on the transport for:

Power	Fast Forward
Run	Standby
Record	Stop
Rewind	

Two channel selectable rotary switches for reproduce channel selection.

Selection of 5 transport speeds by front panel rotary switch. Selector switch for 3 speed ranges accessible through side door.

Braking:

Full dynamic braking from all modes to Stop, and mechanical Fail-Safe braking for AC power failure.

DIRECT RECORD/REPRODUCE SYSTEM

Frequency Response:

<u>Speed (ips)</u>	<u>Frequency Response (± 3 db) **</u>	<u>Minimum Signal- to-Noise Ratio RMS/RMS *</u>	<u>Reference Frequency (kc)</u>
<u>Option 1</u>			
120	400 cps to 1.5 mc	23 db	150
60	400 cps to 750 kc	23 db	75
30	400 cps to 375 kc	23 db	40
15	400 cps to 187.5 kc	23 db	20
7 1/2	400 cps to 93.75 kc	23 db	10
3 3/4	400 cps to 46.88 kc	23 db	5
1 7/8	400 cps to 23.44 kc	23 db	2.5
<u>Option 2</u>			
120	800 cps to 2.0 mc	16 db	150
60	400 cps to 1.0 mc	16 db	75
30	400 cps to 500 kc	16 db	40
15	400 cps to 250 kc	16 db	20
7 1/2	400 cps to 125 kc	16 db	10
3 3/4	400 cps to 62.5 kc	16 db	5
1 7/8	400 cps to 31.25 kc	16 db	2.5

*Measured relative to reference frequency with external filters at normal record level.

Equalization: **

Logic circuitry provides automatic, five speed, equalizer switching for 2 monitor channels. Each monitor channel can be adjusted for ± 3 db response on any selected track; however, variations exceeding this value may be noted as the monitor channel is switched from one track to another, with any given equalizer setting.

When tapes recorded on a PC-500 are reproduced on laboratory equipment, all channels will meet or exceed the above specifications.

Input Impedance:

10,000 ohms $\pm 10\%$ unbalanced to ground.

Input Level:

0.35 to 10 volts RMS, adjustable to produce normal record level.

Output Impedance:

50 ohms or less unbalanced to ground.

Output Level:

Two monitoring channels, with rotary selectable inputs, provide equalized, adjustable, output levels of 1 volt RMS nominal, into 50 ohms.

Unequalized preamplifier outputs for all channels are available at a multi-coaxial connector at the top rear of the machine.

Normal Record Level: Defined as that record level which produces 1% third order harmonic distortion, when using a 150 kc signal at 120 ips.

Metering: One meter may be switched to monitor the record level of any channel, or the reproduce level of either of the two monitoring channels.

MAGNETIC HEADS

Standard IRIG recommendations.

Tracks: $\frac{1}{2}$ " tape - 7 tracks; 1" tape - 14 tracks.

Track Dimensions: Meet recommendations of IRIG Document 106-65.

Gap Scatter: Record: Trailing edges within a 100 microinch band.

Reproduce: Gap center lines within a 100 microinch band.

Gap Azimuth: Alignment of individual gaps within a head stack are within ± 1 minute of arc, referenced to straight line which is perpendicular to the direction of tape travel and in the plane of the tape. Reproduce heads adjustable within a range of $\pm 1^\circ$ nominal azimuth.

Stack Separation: 1.500 $\pm$ 0.001 inch.

In the construction of the equipment described, Revere-Mincom Division, 3M Company reserves the right to modify the equipment for reasons of improved performance and operational flexibility. These specifications are based on standard Mincom test procedures, and subject to change without notice.

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